

ABSTRACT

A distributed system framework and a distributed system architecture that includes three features: it can accommodate a large number of addressable entities, it is possible to connect any arbitrary group of entities together into a virtual network, and the infrastructure supports large numbers of concurrent virtual networks. In one aspect, the invention includes a distributed system framework for a networked environment, including a plurality of process objects, each process object including: a program method for creating at least one inbox for storing messages received from another process object; a program method for creating at least one outbox for storing messages to be transmitted to another process object; a freeze method that saves the state of the process object to persistent storage, thereby changing the process object to a frozen process object; a thaw method that restores the frozen process object from the persistent storage, thereby changing the frozen process object to a ready process object; a program method for interconnecting each created outbox of the process object to a created inbox of at least one other process object, thereby establishing a personal network between the process object and such other process objects within a communication session to perform at least one task by passing messages between the interconnected outboxes and inboxes.